

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 30

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte DAVID A. BERNARD

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Appeal No. 2001-1473  
Application 08/946,736

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HEARD: July 10, 2002

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Before STAAB, MCQUADE, and BAHR, Administrative Patent Judges.  
MCQUADE, Administrative Patent Judge.

DECISION ON APPEAL

David A. Bernard appeals from the final rejection of claims 15 through 17, 19 and 27 through 31, all of the claims pending in the application.

THE INVENTION

The invention relates to "a precision drill sharpener and a grinding wheel assembly adapted to be used with the . . . sharpener" (specification, page 1). Representative claims 15 and 29 read as follows:

15. A drill sharpener comprising:  
a housing;

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a motor disposed in said housing having a motor shaft extending therefrom;

a grinding wheel assembly comprising a grinding wheel operatively coupled to said motor shaft;

a drill mounting chuck;

a pair of peripheral cams carried by the barrel portion of the chuck;

said housing defining at least one chuck receiving ports [sic, port] having a chuck receiving sleeve therein to position the chuck and a drill in operative relation to a grinding surface of the grinding wheel;

wherein said grinding wheel is made of steel and is of a small diameter, and said grinding surface comprises diamond plated to said grinding wheel; and

wherein said motor operates at speeds on the order of 15,000 revolutions per minute.

29. A drill sharpener comprising:

a housing;

a grinding wheel assembly comprising a grinding wheel and means for coupling said grinding wheel assembly to a motor shaft;

said housing defining at least one chuck receiving port having a chuck receiving sleeve therein to position a chuck and a drill to be sharpened in operative relation to a grinding surface of the grinding wheel;

wherein said grinding wheel comprises a hollow cylindrical metal ring having diamond particles plated to an outer surface thereof to form said grinding surface, and a hub around which said cylindrical ring is fitted, wherein said hub includes said means for coupling said grinding wheel assembly to a motor shaft.

#### THE EVIDENCE

The items relied on by the examiner as evidence of obviousness are:

Liss	3,574,975	Apr. 13, 1971
Christian et al. (Christian)	5,400,546	Mar. 28, 1995
Wiand	5,681,211	Oct. 28, 1997

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The items relied on by the appellant as evidence of non-obviousness are:

The 37 CFR § 1.132 Declaration of David A. Bernard filed December 3, 1998 as part of Paper No. 8 (Bernard I)

The 37 CFR § 1.132 Declaration of David Bernard filed June 2, 1999 as part of Paper No. 12 (Bernard II)

#### THE REJECTIONS

Claims 15, 16 and 28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Christian.

Claims 17, 19, 27, 29 and 30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Christian in view of Wiand.

Claim 31 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Christian in view of Wiand and Liss.

Attention is directed to the appellant's brief (Paper No. 17) and to the examiner's revised answer (Paper No. 25) for the respective positions of the appellant and the examiner with regard to the merits of these rejections.<sup>1</sup>

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<sup>1</sup> As the result of a terminal disclaimer (Paper No. 22) made of record by the appellant, the examiner (see Paper No. 23) has withdrawn an obviousness-type double patenting rejection entered in the original answer (Paper No. 19).

DISCUSSION

I. Claims 15 through 17, 19, 27 and 28

We shall not sustain the standing 35 U.S.C. § 103(a) rejection of claims 15, 16 and 28 as being unpatentable over Christian, or the standing 35 U.S.C. § 103(a) rejection of claims 17, 19 and 27 as being unpatentable over Christian in view of Wiand. For the reasons expressed below, the scope of claim 15, and claims 16, 17, 19, 27 and 28 which depend therefrom, is indefinite. Accordingly, the prior art rejections thereof must fall since they are necessarily based on speculative assumption as to the meaning of the claims. See In re Steele, 305 F.2d 859, 862-63, 134 USPQ 292, 295 (CCPA 1962). It should be understood, however, that our decision in this regard is based solely on the indefiniteness of the claimed subject matter, and does not reflect on the adequacy of the prior art evidence applied in support of the rejections.

II. Claims 29 and 30

Christian, the examiner's primary reference, discloses a drill sharpener which includes a housing 10, a timing tube receptacle 12, a point sharpening receptacle 14, a point-splitting receptacle 16, an electric motor housing 18, a pair of cutting wheels 20, 22 supported on the output shaft and hub of

the motor, either Borazon or diamond cutting grit electroplated on the cutting surfaces of the wheels 20, 22, and a drill chuck 24 having peripheral cam surfaces 48 and 50.

The appellant does not dispute the examiner's assessment (see page 5 in the revised answer) that Christian responds to all of the limitations in claim 29 except for those requiring a grinding wheel which comprises a hollow cylindrical metal ring having diamond particles plated to its outer surface and a hub around which the cylindrical ring is fitted, wherein the hub includes means for coupling to a motor shaft. To cure these deficiencies in Christian, the examiner turns to Wiand.

Wiand discloses several embodiments of a grinding wheel generally composed of a core element rigidly secured to a drive shaft via a set screw and typically made of brass, and a drop-on cylindrical grinding bit slidably engageable with, and readily removable from, a cylindrical portion of the core element and made of a metal such as brass or steel with a diamond abrasive grit electroplated thereon. According to Wiand (see column 1, lines 50 through 60; column 2, lines 53 through 57; and column 6, lines 4 through 12), the two-part nature of the assembly permits worn grinding surfaces to be replaced in an expeditious and cost effective manner.

In proposing to combine Christian and Wiand to reject claim 29, the examiner concludes that it would have been obvious at the time the invention was made to a person having ordinary skill in the art "to have modified the Christian sharpener with the quick disconnect and connect arrangement as taught by Wiand for the grinding assembly to increase the productivity of the sharpening operation" (revised answer, page 5). The appellant counters (see pages 13 through 17 in the brief) that the examiner's rationale is flawed because the Christian sharpener is not amenable to a quick connect/disconnect feature due to the relative inaccessibility of its grinding wheel assembly, and that the collective teachings of Christian and Wiand would not have suggested the proposed combination for any other reason.

Notwithstanding the appellant's argument to the contrary, Wiand's express disclosure of the aforementioned grinding surface replacement benefits afforded by the subject two-part grinding wheel assembly would have furnished the artisan with ample motivation or suggestion to employ such an assembly in the Christian sharpener. Because Wiand's two-part assembly constitutes a ring and hub construction of the sort required by claim 29, the proposed modification of the Christian sharpener would meet all of the limitations in the claim. Although

Christian's grinding wheel assembly might not be as accessible as Wiand's due to its location within a housing, it is not evident why a person of ordinary skill in the art would view this as negating the quick connect/disconnect advantage noted by the examiner.

Hence, the combined teachings of Christian and Wiand establish a prima facie case of obviousness with respect to the subject matter recited in claim 29.

As for the appellant's evidence of non-obviousness, the Bernard I declaration, advanced by the appellant to traverse the rejection of claim 15 (see pages 8 through 12 in the brief), deals with the issue of whether it would have been obvious to incorporate a high speed motor into the Christian sharpener. This issue is not relevant to claim 29, which does not require the drill sharpener recited therein to have a high speed motor.

The Bernard II declaration, proffered by the appellant to demonstrate commercial success of the claimed invention (see pages 18 through 20 in the brief), pertains to a so-called "Drill Doctor" drill sharpener. The declaration attributes the monetary and unit sales data asserted therein to the compactness, low price and performance afforded by the Drill Doctor's (1) small diameter grinding wheel, (2) motor operating at a speed on the

order of 15,000 revolutions per minute, and (3) diamond-plated hollow cylindrical ring disposed around a hub coupled to the motor shaft to accommodate the small grinding wheel and high speed motor. Claim 29, however, does not call for the drill sharpener recited therein to have a small diameter grinding wheel or a motor operating at a speed on the order of 15,000 revolutions per minute. Commercial success is relevant in the obviousness context only if there is proof that the sales were a direct result of the unique characteristics of the claimed invention; in other words, a nexus is required between the sales and the merits of the claimed invention. See In re Huang, 100 F.3d 135, 137, 40 USPQ2d 1685, 1689 (Fed. Cir. 1996); Cable Elec. Prods. Inc. v. Genmark, Inc., 770 F.2d 1015, 1026-27, 226 USPQ 881, 887-88 (Fed. Cir. 1985). Because claim 29 does not recite the particular grinding wheel and motor touted by the declaration as critical to the asserted sales data, the requisite nexus between the sales data and the subject matter recited in the claim is missing. Thus, any commercial success shown by the declaration is irrelevant to the issue of obviousness at hand.

In light of the foregoing, the Bernard I and II declarations have little, if any, value as evidence of non-obviousness with respect to the subject matter actually recited in claim 29. To



the extent that the declarations do constitute such evidence, they are clearly outweighed by the examiner's strong reference evidence of obviousness. Consequently, we shall sustain the standing 35 U.S.C. § 103(a) rejection of claim 29 as being unpatentable over Christian in view of Wiand.

We also shall sustain the standing 35 U.S.C. § 103(a) rejection of dependent claim 30 as being unpatentable over Christian in view of Wiand since the appellant has not challenged such with any reasonable specificity, thereby allowing this claim to stand or fall with parent claim 29 (see In re Nielson, 816 F.2d 1567, 1572, 2 USPQ2d 1525, 1528 (Fed. Cir. 1987)).

### III. Claim 31

Claim 31 depends from claim 30 and requires a disk made of a material having high thermal conductivity to be in intimate contact with the grinding wheel hub to draw heat away therefrom for dissipation into a surrounding environment. The examiner's reliance on Liss to remedy the acknowledged failure of the basic Christian-Wiand reference combination to account for these features is not well founded.

Liss discloses a surface grinder comprising an electric motor 16 having a drive shaft 14, a grinding wheel 19 mounted on the shaft, and a bladed fan unit 11, 12 secured on the shaft

adjacent one side of a grinding wheel spacer by a washer 20 and nut 21. The fan unit generates a breeze of air which cools the workpiece being grinded and keeps the grinding wheel free of ground particles. According to the examiner,

the fan plate (11) is shown in intimate contact with the grinding shaft (hub). Thus, a certain degree of heat transfer between the hub and the plate is contemplated to occur. Inherently, it is old and notoriously well-known to select a high thermal conductivity material of the fan plate (11) for maximizing the heat transfer between the hub and the fan plate.

Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have modified the [Christian] drill sharpener with a fan plate fixedly attached to the shaft of the grinding wheel as taught by Liss to provide cooling to the grinding process for optimum grinding condition [revised answer, page 6].

Liss does not support this position. More particularly, there is no teaching or suggestion in Liss that the fan unit 11 is made of a material having high thermal conductivity, is in intimate contact with the hub of a grinding wheel assembly or functions to draw heat away from the hub for dissipation into a surrounding environment.

Accordingly, we shall not sustain the standing 35 U.S.C. § 103(a) rejection of claim 31 as being unpatentable over Christian in view of Wiand and Liss.

IV. New ground of rejection

Claim 15, and claims 16, 17, 19, 27 and 28 which depend therefrom, are rejected under 35 U.S.C. § 112, second paragraph, as failing to particularly point out and distinctly claim the subject matter the appellant regards as the invention.

The second paragraph of 35 U.S.C. § 112 requires claims to set out and circumscribe a particular area with a reasonable degree of precision and particularity. In re Johnson, 558 F.2d 1008, 1015, 194 USPQ 187, 193 (CCPA 1977). The purpose of this requirement is to provide those who would endeavor, in future enterprise, to approach the area circumscribed by the claims of a patent with the adequate notice demanded by due process of law, so that they may more readily and accurately determine the boundaries of protection involved and evaluate the possibility of infringement and dominance. In re Hammack, 427 F.2d 1378, 1382, 166 USPQ 204, 208 (CCPA 1970).

As indicated above, claim 15 recites a drill sharpener comprising, inter alia, a grinding wheel of a "small" diameter. Although § 112, ¶ 2, does not require exact precision in claim language, definiteness problems often arise when words of degree (such as "small") are used in a claim. Seattle Box Co. v. Industrial Crating & Packing, Inc., 731 F.2d 818, 826, 221 USPQ

568, 573-74 (Fed. Cir. 1984). When such words are employed, it must be determined whether the underlying specification provides some standard for measuring the degree, i.e., whether one of ordinary skill in the art would understand what is claimed when the claim is read in light of the specification. Id.

The appellant's specification (see pages 3, 4, 21) attaches great importance to the "small" diameter grinding wheel in achieving a more compact design as compared to the Christian drill sharpener and large industrial sharpeners, and acknowledges somewhat cryptically that "[s]mall grinding wheels have been used in the past in drill sharpeners" (page 22). Nonetheless, neither the specification, nor any other part of the record, provides any sensible standard which would allow the artisan to determine with a reasonable degree of precision and particularity the meaning of the claim limitation in question. As a result, the scope of claim 15, and claims 16, 17, 19, 27 and 28 which depend therefrom, is indefinite.

#### SUMMARY

The decision of the examiner to reject claims 15 through 17, 19 and 27 through 31 is affirmed with respect to claims 29 and 30, and reversed with respect to claims 15 through 17, 19, 27, 28

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and 31. In addition, a new rejection of claims 15 through 17, 19, 27 and 28 is entered pursuant to 37 CFR § 1.196(b).

In addition to affirming the examiner's rejection of one or more claims, this decision contains a new ground of rejection pursuant to 37 CFR § 1.196(b)(amended effective Dec. 1, 1997, by final rule notice, 62 Fed. Reg. 53,131, 53,197 (Oct. 10, 1997), 1203 Off. Gaz. Pat. & Trademark Office 63, 122 (Oct. 21, 1997)). 37 CFR § 1.196(b) provides, "A new ground of rejection shall not be considered final for purposes of judicial review."

Regarding any affirmed rejection, 37 CFR § 1.197(b) provides:

(b) Appellant may file a single request for rehearing within two months from the date of the original decision . . . .

37 CFR § 1.196(b) also provides that the appellant, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of proceedings (37 CFR § 1.197(c)) as to the rejected claims:

(1) Submit an appropriate amendment of the claims so rejected or a showing of facts relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the application will be remanded to the examiner. . . .

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(2) Request that the application be reheard under § 1.197(b) by the Board of Patent Appeals and Interferences upon the same record. . . .

Should the appellant elect to prosecute further before the Primary Examiner pursuant to 37 CFR § 1.196(b)(1), in order to preserve the right to seek review under 35 U.S.C. §§ 141 or 145 with respect to the affirmed rejection, the effective date of the affirmance is deferred until conclusion of the prosecution before the examiner unless, as a mere incident to the limited prosecution, the affirmed rejection is overcome.

If the appellant elects prosecution before the examiner and this does not result in allowance of the application, abandonment or a second appeal, this case should be returned to the Board of Patent Appeals and Interferences for final action on the affirmed rejection, including any timely request for reconsideration thereof.

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No time period for taking any subsequent action in  
connection with this appeal may be extended under 37 CFR  
§ 1.136(a).

AFFIRMED-IN-PART; 37 CFR § 1.196(b).

LAWRENCE J. STAAB	)	
Administrative Patent Judge	)	
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	)	APPEALS AND
JOHN P. MCQUADE	)	
Administrative Patent Judge	)	INTERFERENCES
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JENNIFER D. BAHR	)	
Administrative Patent Judge	)	

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